CLAIMS

What is claimed is:

1. An organic composition comprising less than 20 parts per million of water, less than 90 ppm of oxygen, and one or more compounds selected from the group consisting of:

i) cyclic, linear, or branched hydrofluorocarbons having 2 to 10 carbon atoms in which there are more fluorines than hydrogen, no runs of adjacent C-H bonds longer than two (CH-CH), no runs of adjacent C-F bonds longer than 6 (CF-CF-CF-CF-CF-CF), and no $-CH_2CH_3$ radicals;

ii) $X\text{-}R_f^a[OR_f^b]_nOR_f^cY$ wherein X and Y can be hydrogen or fluorine and R_f^a, R_f^b, and R_f^c are 1 to 3 carbon fluorocarbon radicals, linear or branched

in which there are more fluorines than hydrogens, no runs of adjacent C-H bonds longer than two are present, no $-CH_2CH_3$ radicals are present and no sequences with hydrogen on both sides of an ether oxygen (CH-O-CH) are present;

iii) $C_nF_{2n-v+2}H_v$ wherein n = 2 to 10, v<n+1, the number of fluorines equals or exceeds the number of hydrogens, no runs of adjacent C-H bonds longer than two are present, no runs of adjacent C-F bonds longer than 6 are present, and no CH_2CH_3 radicals are present;

iv) $C_nF_{2n+1}CFHCFHC_mF_{2m+1}$ where n equals 1 to 4; and m equals 1 to 4;

v) $CF_3CH_2CF_2CH_3$;

vi) $F[CF(CF_3)CF_2O]_nCFHCF_3$ where n = 1 to 5;

vii) $F[CF(CF_3)CF_2O]_nCF_2CF_3$ where n = 1 to 5;

viii) $HCF_2(OCF_2)_n(OCF_2CF_2)_mOCF_2H$ where n + m = 1 to 8; and,

ix) cyclic, linear, or branched perfluorocarbon and hydrofluorocarbon amines, and ether-amines in which there are more fluorines than hydrogens, no runs of hydrogen longer than two (CH-CH), no $-CH_2CH_3$ radicals are present, no runs of adjacent C-F bonds longer than 6 (CF-CF-CF-CF-CF-CF), and no C-H bonds immediately adjacent to either nitrogen or oxygen.

2. The composition of Claim 1 wherein said one or more compounds are selected from the group consisting of perfluorotributylamine, perfluoro-N-methymorpholine, $C_nF_{2n+1}CFHCFHC_mF_{2m+1}$ where n equals 1 to 4; and m equals 1 to 4 and $HCF_2(OCF_2)_n(OCF_2CF_2)_mOCF_2H$ where n + m = 1 to 8.

3. The composition of Claim 1 wherein said one or more compounds are selected from the group consisting of perfluorotributylamine, perfluoro-N-methymorpholine, $CF_3CFHCFHCF_2CF_3$, $CF_3CH_2CF_2CH_3$ and $HCF_2O(CF_2O)_n(CF_2CF_2O)_mCF_2H$ where n+m=2 to 6.

4. The composition of Claim 1 wherein at least one of said one or more compounds is a liquid.

5. A process for preparing an organic composition for use in optical imaging applications comprising subjecting to treatment with one or more means for extracting one or more photochemically active species, a compound selected from the group consisting of:

i) cyclic, linear, or branched hydrofluorocarbons having 2 to 10 carbon atoms in which there are more fluorines than hydrogen, no runs of adjacent C-H bonds longer than two (CH-CH), no runs of adjacent C-F bonds longer than 6 (CF-CF-CF-CF-CF-CF), and no $-CH_2CH_3$ radicals;

ii) $X\text{-}R_f^a[OR_f^b]nOR_f^cY$ wherein X and Y can be hydrogen or fluorine and R_f^a, R_f^b, and R_f^c are 1 to 3 carbon fluorocarbon radicals, linear or branched

in which there are more fluorines than hydrogens, no runs of adjacent C-H bonds longer than two are present, no $-CH_2CH_3$ radicals are present and no sequences with hydrogen on both sides of an ether oxygen (CH-O-CH) are present;

iii) $C_nF_{2n-v+2}H_v$ wherein n = 2 to 10, v<n+1, no runs of adjacent C-H bonds longer than two are present, no runs of adjacent C-F bonds longer than 6 are present, and no CH_2CH_3 radicals are present;

iv) $C_nF_{2n+1}CFHCFHC_mF_{2m+1}$ where n equals 1 to 4; and m equals 1 to 4;

v) $CF_3CH_2CF_2CH_3$;

vi) $F[CF(CF_3)CF_2O]_nCFHCF_3$ where n = 1 to 5;

vii) $F[CF(CF_3)CF_2O]_nCF_2CF_3$ where n = 1 to 5;

viii) $HCF_2(OCF_2)_n(OCF_2CF_2)_mOCF_2H$ where n + m = 1 to 8; and,

ix) cyclic, linear, or branched perfluorocarbon and hydrofluorocarbon amines, and ether-amines in which there are more fluorines than hydrogens, no runs of hydrogen longer than two (CH-CH), no $-CH_2CH_3$ radicals are present and no runs of adjacent C-F bonds longer than 6 (CF-CF-CF-CF-CF-CF), and no C-H bonds immediately adjacent to either nitrogen or oxygen;

at least until the desired concentration of said one or more photochemically active species is achieved.

6. The process of Claim 5 wherein said one or more photochemically active species comprises moisture, and the desired concentration is below 20 parts per million.

7. The process of Claim 5 wherein said one or more photochemically active species comprises oxygen, and the desired concentration is below 90 parts per million.

8. The process of Claim 5 wherein said one or more photochemically active species comprises moisture and oxygen and the desired concentrations are below 20 parts per million and below 90 parts per million, respectively.

9. The process of Claim 5 wherein said one or more compounds are selected from the group consisting of perfluorotributylamine, perfluoro-N-methymorpholine, $C_nF_{2n+1}CFHCFHC_mF_{2m+1}$ where n equals 1 to 4; and m equals 1 to 4 and $HCF_2(OCF_2)_n(OCF_2CF_2)_mOCF_2H$ where n + m = 1 to 8.

10. The process of Claim 5 wherein said one or more compounds are selected from the group consisting of perfluorotributylamine, perfluoro-N-methymorpholine, $CF_3CFHCFHCF_2CF_3$, $CF_3CH_2CF_2CH_3$ and $HCF_2O(CF_2O)_n(CF_2CF_2O)_mCF_2H$ where n+m=2 to 6.

11. The process of Claim 5 wherein at least one of said one or more compounds is a liquid.

12. The process of Claim 5 wherein said means comprises contacting said compound with molecular sieves.

13. The process of Claim 5 wherein said means comprises sparging with an inert gas.

14. The process of Claim 5 wherein said means comprises contacting said compound with molecular sieves and sparging said compound with an inert gas.

15. A process for forming an optical image on a substrate, the process comprising:

a) radiating electromagnetic radiation from a source capable of radiating electromagnetic radiation in the range of 140-260 nm;

b) receiving said radiation on a target disposed to receive at least a portion of said radiation; and

wherein one or more optically transparent compositions is disposed between said radiation source and said target, at least one of said optically transparent compositions comprising a composition treated with one or more means for extracting one or more photochemically active species and one or more compounds selected from the group consisting of:

i) cyclic, linear, or branched hydrofluorocarbons having 2 to 10 carbon atoms in which there are more fluorines than hydrogen, no runs of adjacent C-H bonds longer than two (CH-CH), no runs of adjacent C-F bonds longer than 6 (CF-CF-CF-CF-CF-CF), and no $-CH_2CH_3$ radicals;

ii) $X\text{-}R_f^a[OR_f^b]nOR_f^cY$ wherein X and Y can be hydrogen or fluorine and R_f^a, R_f^b, and R_f^c are 1 to 3 carbon fluorocarbon radicals, linear or branched

In which there are more fluorines than hydrogens, no runs of adjacent C-H bonds longer than two are present, no $-CH_2CH_3$ radicals are present and no sequences with hydrogen on both sides of an ether oxygen (CH-O-CH) are present;

iii) $C_nF_{2n-v+2}H_v$ wherein n = 2 to 10, v<n+1, no runs of adjacent C-H bonds longer than two are present, no runs of adjacent C-F bonds longer than 6 are present, and no CH_2CH_3 radicals are present;

iv) $C_nF_{2n+1}CFHCFHC_mF_{2m+1}$ where n equals 1 to 4; and m equals 1 to 4;

v) $CF_3CH_2CF_2CH_3$;

vi) $F[CF(CF_3)CF_2O]_nCFHCF_3$ where n = 1 to 5;

vii) $F[CF(CF_3)CF_2O]_nCF_2CF_3$ where n = 1 to 5;

viii) $HCF_2(OCF_2)_n(OCF_2CF_2)_mOCF_2H$ where n + m = 1 to 8; and,

ix) cyclic, linear, or branched perfluorocarbon and hydrofluorocarbon amines, and ether-amines in which there are more fluorines than hydrogens, no runs of hydrogen longer than two (CH-CH), no $-CH_2CH_3$ radicals are present and no runs of adjacent C-F bonds longer than 6 (CF-CF-CF-CF-CF-CF), and no C-H bonds immediately adjacent to either nitrogen or oxygen.

16. The process of Claim 15 wherein said one or more compounds are selected from the group consisting of perfluorotributylamine, perfluoro-N-methymorpholine, $C_nF_{2n+1}CFHCFHC_mF_{2m+1}$ where n equals 1 to 4; and m equals 1 to 4 and $HCF_2(OCF_2)_n(OCF_2CF_2)_mOCF_2H$ where n + m = 1 to 8.

17. The process of Claim 15 wherein said one or more compounds are selected from the group consisting of perfluorotributylamine, perfluoro-N-methymorpholine, $CF_3CFHCFHCF_2CF_3$, $CF_3CH_2CF_2CH_3$ and $HCF_2O(CF_2O)_n(CF_2CF_2O)_mCF_2H$ where n+m=2 to 6.

18. The process of Claim 15 wherein at least one of said one or more compounds is a liquid.

19. The process of Claim 15 wherein said at least one of said radiation source and said target are immersed in said optically transparent composition.

20. The process of Claim 15 wherein both radiation source and target are immersed in said optically transparent composition.

21. The process of Claim 15 wherein said treated composition comprises less than 20 parts per million of water, less than 90 parts per million of oxygen.

22. The process of Claim 15 wherein said means comprises contacting said compound with molecular sieves.

23. The process of Claim 15 wherein said means comprises sparging with an inert gas.

24. The process of Claim 15 wherein said means comprises contacting said compound with molecular sieves and sparging said compound with an inert gas.